Quickie® Pulse

6 BC, 6 SC

SUPPLIER: This manual must be given to the rider of this wheelchair.

RIDER: Before using this wheelchair read this entire manual and save for future reference.

Owner's Manual

QUICKIE®

SUNRISE MEDICAL®

www.sunrisemedical.com

Improving People's Lives

I. INTRODUCTION

SUNRISE LISTENS

Thank you for choosing a Quickie wheelchair. We want to hear your questions or comments about this manual, the safety and reliability of your chair, and the service you receive from your Sunrise supplier. Please feel free to write or call us at the address and telephone number below:

SUNRISE MEDICAL

Customer Service Department

7477 East Dry Creek Parkway

Longmont, Colorado 80503

(800) 333-4000 or (303) 218-4500

FOR ANSWERS TO YOUR QUESTIONS

Your authorized supplier knows your wheelchair best and can answer most of your questions about chair safety, use and maintenance. For future reference, fill in the following:

Supplier:_____

Address: _____

_____

Telephone: _____

Serial #: _____ **Date/Purchased:** _____

USER WARNING

⚠WARNING

Attention wheelchair users, do not operate this wheelchair without first reading the owner's manual. If you do not understand the instructions and warnings of this owner's manual please contact your dealer or qualified technician before operating this Quickie wheelchair. Failure to do so may result in damage and/or injury.

DEALER/TECHNICIAN WARNING

⚠WARNING

Attention dealers and qualified technicians, do not operate or service this wheelchair without first reading this owners manual. If you do not understand the instructions and warnings of this owners manual please contact the Quickie Technical Service Department before operating and/or servicing this Quickie wheelchair. Failure to do so may result in damage and/or injury.

⚠WARNING

In addition, power wheelchairs may contain printed circuit boards. Careful attention should be given to the Printed Circuit Board Handling Techniques insert supplied with the chair.

Related Documents

Listed below are additional documents which are referenced in this owners manual.

- RNET Owners Manual
- RNET OBP Owners Manual
- RNET Omni Owners Manual

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III. YOUR CHAIR AND ITS PARTS

1. Flip-back, height-adjustable armrest
2. VR2 controller joystick (RNET optional)
3. Frame seat (adjustable ASAP)
4. Front caster 7"
5. Rear stabilizing caster 6"
6. Swing-away riggings (shown); single plate foot platform (optional); ELR center mount (optional)
7. Drive wheels
8. Freewheel release
9. Caster Fork (front)
10. Caster Fork (rear)
11. Shroud

Models

Pulse 6 BC

Pulse 6 SC (shown)

QUICKIE PULSE

Weight

	SC	BC
complete chair:	260 lbs	235 lbs
w/o batteries:	182 lbs	157 lbs
base:	113 lbs	113 lbs
seat (w/armrests & joystick)	44 lbs	44 lbs

Drive Wheels

13" Mag: Std. airless insert

Joystick

Standard – VR2 (right-hand or left-hand mount)

Option - VR2 w/actuator control (SC only)

Option - RNET

Batteries

(2 deep cycle batteries required to operate chair)

Standard - Group 22

Battery Charger

Off board 8 AMP

Colors

Red, Black

Seats, Upholstery and Style

Standard- A.S.A.P. Seat Frame (BC, SC only):

Sizes: 16" - 20" wide, 16" - 20" deep

Footrest:

Standard (SC & BC)- Swing away footrests with heel loops

Option- Foot platform

Option- Manual elevating legrests

Casters (front)

Standard- 7” solid

Casters (rear)

Standard- 6” solid

Armrest

14" Flip back, height adjustable 14" arm pad (BC, SC)

Option- Locking, two-point arm

Suspension

Standard- all wheel independent

All features may not be available with some chair setups or in conjunction with another chair feature. Please consult your supplier for more information. Your authorized supplier can also provide you with more information on accessories.

IV. NOTICE– READ BEFORE USE

A. CHOOSE THE RIGHT CHAIR & SAFETY OPTIONS

Sunrise provides a choice of many power wheelchair styles, sizes and adjustments to meet the needs of the rider. However, final selection of a wheelchair rests solely with you and your health care professional. Choosing the best chair for you depends on such things as:

1. Your size, disability, strength, balance and coordination.
2. Your intended use, and your level of activity.
3. The types of hazards you must overcome in daily use (in areas where you are likely to use your chair).
4. The need for options for your safety and comfort (such as positioning belts or special seat systems).

B. ADJUST CHAIR TO YOUR ABILITY

You need to work with your doctor, nurse or therapist, and your supplier, to fit this chair and adjust the controller settings for your level of function and ability.

C. REVIEW THIS MANUAL OFTEN

Before using this chair you, and each person who may assist you, should read this entire Manual and make sure to follow all instructions. Review the warnings often, until they are second nature to you.

D. WARNINGS

The word "WARNING" refers to a hazard or unsafe practice that may cause severe injury or death to you or to other persons. The "Warnings" are in four main sections, as follows:

1. **V — EMI**
   Here you will learn about electromagnetic interference and how it can affect your chair.
2. **VI — GENERAL WARNINGS**
   Here you will find a safety checklist and a summary of risks you need to be aware of before you ride this chair.
3. **VII — WARNINGS — COMPONENTS & OPTIONS**
   Here you will learn about your chair. Consult your supplier and your health care professional to help you choose the best set-up and options for your safety.
4. **XI — BATTERIES**
   Here you will learn about battery and charger safety, and how to avoid injury.

NOTE– *Where they apply, you will also find "Warnings" in other sections of this Manual.*

V. EMI (ELECTROMAGNETIC INTERFERENCE)

⚠WARNING

Heed all warnings to reduce the risk of unintended brake release or chair movement:

1. **Beware of the danger from hand-held transceivers. (A "transceiver" is a device that both sends and receives radio wave signals). Never turn on or use a hand-held transceiver while power to your chair is on. Use extra care if you believe that such a device may be in use near your chair.**
2. **Be aware of nearby radio or TV stations, and avoid coming close to them.**
3. **If unintended movement occurs, turn your chair off as soon as it is safe to do so.**

A. WHAT IS EMI?

⚠WARNING

1. EMI means: electromagnetic (EM) interference (I). EMI comes from radio wave sources such as radio transmitters and transceivers.
2. There are a number of sources of intense EMI in your daily environment. Some of these are obvious and easy to avoid. Others are not, and you may not be able to avoid them.
3. Powered wheelchairs may be susceptible to electromagnetic interference (EMI) emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two way radios, and cellular phones.
4. EMI can also be produced by conducted sources or electrostatic discharge (ESD).

B. WHAT EFFECT CAN EMI HAVE?

⚠WARNING

1. EMI can cause your chair, without warning, to:
   - Release its brakes
   - Move by itself
   - Move in unintended directions

   If any of these occurs, it could result in severe injury to you or others.
2. EMI can damage the control system of your chair. This could create a safety hazard, and lead to costly repairs.

C. SOURCES OF EMI

⚠WARNING

The sources of EMI fall into three broad types:

1. Hand-Held Transceivers:

The antenna is usually mounted directly on the unit. These include:

- Citizens band (CB) radios
- "Walkie-talkies"
- Security, fire and police radios
- Cellular phones
- Lap-top computers with phone or fax
- Other personal communication devices

NOTE– *These devices can transmit signals while they are on, even if not in use.*

2. Medium-Range Mobile Transceivers:

These include two-way radios used in police cars, fire trucks, ambulances and taxi cabs. The antenna is usually mounted on the outside of the vehicle.

3. Long-Range Transceivers:

These include commercial radio and TV broadcast antenna towers and amateur (HAM) radios. Note: The following are not likely to cause EMI problems: Lap-top computers (without phone or fax), Cordless phones, TV sets or AM/FM radios, CD or tape players.

D. DISTANCE FROM THE SOURCE

⚠ WARNING

EM energy rapidly becomes more intense as you get closer to the source. For this reason, EMI from hand-held devices is of special concern. (See C.1 above) A person using one of these devices can bring high levels of EM energy very close to your chair without you knowing it.

E. IMMUNITY LEVEL

⚠ WARNING

1. The level of EM energy is measured in volts per meter (V/m). Every power wheelchair can resist EMI up to a certain level. This is called its "immunity level".
2. The higher the immunity level, the less the risk of EMI. It is believed that a 20 V/m immunity level will protect the power wheelchair user from the more common sources of radio waves.
3. The Quickie Pulse with the following configuration was tested and found to be immune to at least 20 V/m:
   Quickie Pulse power wheelchair with a right-hand mounted RNET controller, A.S.A.P. seat, flip-back armrests, solid flip-up footplate and Group 22 batteries.
4. The following specialty input devices have an unknown effect on the immunity level because they have not been tested with the Quickie Pulse and RNET control system:

- Breath Control
- Proportional Head Control
- Tri-Switch Head Array
- Proportional Mini-Joystick/Chin Control
- Heavy Duty Switched Joystick
- Buddy Button
- Treadle Switch
- Micro Light
- Ribbon Switch
- Star Board
- Proximity Head Array
- Wafer Board
- Zero Touch Switch
- Penta Switch
- 4-Zero Touch Switch
- Plate Switch
- 5-Zero Touch Switch
- Soft Switch
- Disc Switch
- Grasp Switch
- Wobble Switch

⚠ WARNING

Individuals with physical limitations requiring the use of a specialty control input device known not to be immune to 20V/m, or not known, should exercise extra care around known sources of EMI.

⚠ WARNING

There is no way to know the effect on EMI if you add accessories or modify this chair. Any change to your chair may increase the risk of EMI. Parts from other suppliers have unknown EMI properties.

F. REPORT ALL SUSPECTED EMI INCIDENTS

⚠ WARNING

You should promptly report any unintended movement or brake release. Be sure to indicate whether there was a radio wave source near your chair at the time. Contact: Sunrise Medical Customer Service Department at (800) 333-4000.

VI. GENERAL WARNINGS

⚠ WARNING

Heed all warnings in this section. If you fail to do so a fall, tip-over or loss of control may occur and cause severe injury to you or others.

A. NOTICE TO RIDER

⚠ WARNING

1. Before using this chair, you should be trained in its safe use by your health care professional.
2. Every wheelchair is different. Take the time to learn the feel of this chair before you begin riding.
3. Be aware that you must develop your own methods for the safe use of this chair that are best suited to your level of function and ability.
4. Have someone help you practice bending, reaching and transferring until you learn how to do them safely.
5. Never try a new maneuver on your own unless you are sure it is safe.
6. Get to know the areas where you plan to use your chair. Look for hazards and learn how to avoid them.
7. Do not allow additional riders on the chair, armrests or chassis. Doing so may result in injury or damage.

B. NOTICE TO ATTENDANTS

⚠ WARNING

Make sure you heed all warnings and follow all instructions in each section of this manual. (Be aware that warnings that apply to the rider also apply to you).

Notes:

1. You need to work with the rider and the rider's doctor, nurse or therapist, to
   develop safe methods best suited to your abilities and those of the rider.
2. To manually push the chair you must release the motor locks. Make sure you have full control over the chair when you release the motor locks. When you do so the chair will not have brakes.
3. Propel this chair by the armrest supports only. If using a seat frame, propel the chair by the push handles on the top of the backrest. They provide secure points for you to hold the rear of the chair to prevent a fall or tip-over.

C. WEIGHT LIMIT

⚠ WARNING

1. Never exceed a total weight of 300 pounds (136.3 kilograms) for rider plus items carried.
2. Never use this chair for weight training if the total weight (rider plus additional weights) exceeds 300 pounds (136.3 kilograms).
3. Exceeding the weight limit is likely to damage the seat, frame, or fasteners and may cause severe injury to you or others from chair failure.
4. Exceeding the weight limit will void the warranty.

D. CONTROLLER SETTINGS

⚠ WARNING

Be aware that you may need to adjust the controller settings of your chair to reduce the risk of a collision, fall or tip-over.

1. Check and adjust the settings every six to twelve months (or more often, if needed).
2. Consult your supplier to adjust the control settings immediately if you notice any change in your ability to:
   - Control the joystick.
   - Hold your torso erect.
   - Avoid running into objects.

E. EMI

⚠ WARNING

Read Section V to learn about EMI. To reduce the risk of unintended brake release or chair movement:

1. Never turn on or use a hand-held transceiver while power to your chair is on. Use extra care if you believe that such a device may be in use near your chair.
2. Be aware of nearby radio or TV stations, and avoid coming close to them.
3. If unintended movement or brake release occurs, turn your chair off as soon as it is safe.

F. SAFETY CHECK-LIST

⚠ WARNING

Before each use of this chair:

1. Make sure the chair operates smoothly. Check for noise, vibration, or a change in ease of use. (They may indicate low tire pressure, loose fasteners, or damage to your chair). If you detect a problem, make sure to repair or adjust the chair. Deferring repair or adjustment could increase the risk for injury. Your supplier can help you find and correct the problem.
2. Make sure batteries are charged. Green lights on the controller charge indicator will light up when charge is full. Yellow lights indicate battery charge level is getting low. Red lights indicate batteries are in immediate need of charging.

G. CHANGES & ADJUSTMENTS

⚠ WARNING

Never use non-Quickie parts or make changes to your chair unless authorized by Sunrise. (Doing so will void the Warranty and may create a safety hazard).

1. If you modify or adjust this chair it may increase the risk of a fall or tip-over.
2. Modifications unauthorized by Sunrise constitutes remanufacturing of the wheelchair. This voids the warranty. The rider then assumes all future liability for the wheelchair.

H. WHEN SEATED IN A PARKED WHEELCHAIR

⚠WARNING

1. Always turn off all power to your chair when you are parked, even for a moment. This will prevent:
   - Accidental movement from contact with the joystick by you or others.
   - Unintended brake release or movement from EMI sources. (See Section V)
2. Make sure that persons who help you (for example, store clerks) are aware of the joystick and do not touch it. If they do, your chair may move suddenly when you do not expect it.

I. ENVIRONMENTAL CONDITIONS

⚠WARNING

Your chair is not designed for use in a heavy rain storm, or in snowy or icy conditions.

1. Contact with water or excessive moisture can cause an electrical malfunction. The frame, motors and other chair parts are not watertight and may rust or corrode from the inside. To avoid a chair failure:
   - Minimize exposure of your chair to a rain storm or very wet conditions.
   - Never take your chair into a shower, tub, pool or sauna.
   - Do not use your chair in fresh or salt water (such as at the edge of a stream, lake, or ocean).
   - Make sure shroud cover and deck lid are secure.
   - Replace joystick boot if it becomes torn or cracked.
   - Make sure all electrical connections are secure.
   - Dry the chair as soon as you can if it gets wet, or if you use water to clean it.
2. Proceed slowly and use extra care if you must operate your chair on a wet or slick surface.
   - Do so only if you are sure it is safe.
   - Stop if one or both main wheels lose traction. If this occurs, you may lose control of your chair or fall.
   - Never operate your chair on a slope or ramp if there is snow, ice, water or oil film present.
   - When in doubt, have someone help you.
3. When not in use, keep your chair in a clean, dry place.

J. TERRAIN

⚠WARNING

1. This chair is designed for use on firm, even surfaces such as concrete, asphalt and indoor flooring.
2. Do not operate your chair in sand, loose soil or over rough terrain. Doing so may damage wheels, bearings, axles or motors, or loosen fasteners.

K. STREET USE

⚠WARNING

In most states, power chairs are not legal for use on public roads. Be alert to the danger of motor vehicles on roads or in parking lots.

1. At night, or when it is hard to see, use reflective tape on your chair and clothing.
2. It may be hard for drivers to see you. Make eye contact with drivers before you proceed. When in doubt, yield until you are sure it is safe.

L. MOTOR VEHICLE SAFETY

⚠WARNING

To date, the U.S. Department of Transportation has not approved any tie down system for transporting this wheelchair in a motor vehicle.

1. Never sit in this chair while in a moving vehicle. In an accident or sudden stop you may be thrown from the chair.
   - **Wheelchair belts are designed to position the rider only and will not protect you in an accident; further injury may result from the belts.**
2. Always move to an approved vehicle seat. You must be secured with proper motor vehicle restraints.
3. Never transport this chair in the front seat of a vehicle. It may shift and interfere with the driver.
4. Always secure this chair so that it cannot roll or shift.

M. CENTER OF BALANCE

⚠WARNING

The point where this chair will tip forward, back or to the side depends on its center of balance and stability.

The Center Of Balance Is Affected By:

1. The seat height and seat angle.
2. A change in your body position, posture or weight distribution.
3. Using this chair on a ramp or slope.
4. The use of a back pack or other options, and the amount of added weight.

To Reduce The Risk Of A Fall Or Tip-Over:

1. Consult your supplier for information on modifications authorized by Sunrise before you modify or adjust this chair.

NOTE– *You may need to make additional changes to correct the center of balance.*

2. Use extreme care until you know the balance points of this chair and how to avoid a fall or tip-over.

N. TRANSFERS

⚠WARNING

It is dangerous to transfer on your own. It requires good balance and agility. Be aware that there is a point during every transfer when the wheelchair seat is not below you. To avoid a fall:

1. Always turn off power before you transfer to or from your chair. If you fail to do so you may touch the joystick and cause your chair to move when you do not expect it.

2. Make sure motor locks are engaged. This keeps the chair from moving when you transfer.
3. Work with your health care professional to learn safe methods.
   - Learn how to position your body and how to support yourself during a transfer.
   - Have someone help you until you are sure you can do a safe transfer on your own.
4. Move your chair as close as you can to the seat you are transferring to. If possible, use a transfer board.
5. Rotate the front casters until they are as far forward as possible.
6. Be careful of the foot platform. If you can, remove or swing it out of the way.
   - Never stand on footrests when you transfer. Doing so may damage them or cause your chair to tip.
   - Make sure your feet do not "hang up" or get caught in the space between the footrests.
7. Make sure armrests do not interfere.
8. Transfer as far back onto the seat surface as you can. This will reduce the risk that you will miss the seat or fall.

O. REACHING OR LEANING

⚠ WARNING

Reaching or leaning affects the center of balance of your chair. If done improperly, a fall or tip-over is likely. When in doubt, ask for help or use a device to extend your reach.

To Reduce the Risk of injury and/or Damage to the Chair:

1. Never reach or lean if you must shift your weight sideways or rise up off the seat.
2. Never reach or lean if you must move forward in your seat to do so. Always keep your buttocks in contact with the backrest.
3. Never reach with both hands (you may not be able to catch yourself to prevent a fall if you lose your balance).
4. Never try to pick up an object from the floor by reaching down between your knees.
5. Never put pressure on the foot platform while reaching. This may cause the chair to tip if you lean too far.
6. Never reach or lean over the top of the seat back. This may damage the backrest and cause you to fall.

IF YOU MUST REACH OR LEAN, DO SO AT YOUR OWN RISK.

Remember to:

1. Move your chair as close as you can to the object you wish to reach.
2. Rotate the front casters until they are as far forward as possible. This makes the chair more stable.

NOTE– *To do this: Move your chair past the object you want to reach, then back up alongside it. Backing up will rotate the casters forward.*

3. Turn off all power to your chair. If you fail to do so, you may touch the joystick and cause your chair to move when you do not expect it.
4. Firmly grasp an armrest with one hand. This will help to prevent a fall if the chair tips.

P. DRESSING OR CHANGING CLOTHES

⚠ WARNING

Be aware that your weight will shift if you dress or change clothes while seated in this chair. To make the chair more stable, rotate the front casters until they are forward.

Q. OBSTACLES

⚠ WARNING

Obstacles you may have to overcome in daily use include door thresholds, lifts, ramps and hazards such as potholes and broken pavement. These can damage your chair and may cause a fall, tip-over or loss of control.

1. Be aware that thresholds are very dangerous. (Even a small change in height may stop a caster wheel and cause your chair to tip). You may need to:
   - Remove or cover threshold strips between rooms.
   - Install a ramp at entry or exit doors.
2. Keep your eyes moving when you ride; scan the area well ahead of your chair.
3. Make sure the floor areas where you use this chair are level and free of obstacles.
4. To help correct your center of balance:
   - Lean your upper body forward slightly as you go up over an obstacle.
   - Press your upper body backward as you go down from a higher to a lower level.

R. DRIVING IN REVERSE

⚠ WARNING

Use extra care when you drive your chair in reverse. You may lose control or fall if one of the rear wheels hits an object.

1. Operate your chair slowly and at an even speed.
2. Stop often and check to make sure your path is clear of obstacles.

S. RAMPS, SLOPES & SIDEHILLS

⚠ WARNING

The center of balance of your chair changes when you are on a slope.

NOTE– *"Slope" includes a ramp or sidehill. Your chair is less stable when it is at an angle. Never use this chair on a slope unless you are sure it is safe. When in doubt, have someone help you.*

Beware Of:

1. Steep slopes. Do Not use this chair on a slope steeper than 10%. (A 10% slope means: One foot in elevation for every ten feet of slope length).
2. Wet or slippery surfaces (such as when ice, snow, water or oil film is present). A loss of traction may cause a fall or tip-over.
3. A change in grade on a slope (or a lip, bump or depression). These may cause a fall or tip-over.
4. A drop-off at the bottom of a slope. (A drop-off of as small as 3/4 inch can stop a front caster and cause the chair to tip forward).

T. TO REDUCE THE RISK OF A FALL, TIP-OVER OR LOSS OF CONTROL

⚠WARNING

1. Never use your chair on a slope unless you are sure you can do so without losing traction.
2. Always go as straight up and as straight down as you can.
   - Do not "cut the corner" on a slope or ramp.
   - Do not turn or change direction on a slope.
3. Always stay in the center of the ramp. Make sure ramp is wide enough that you are not at risk that a wheel may roll off the side.
4. Lean or press your body uphill. This will help adjust for a change in the center of balance caused by the slope.
5. Keep your chair moving at a slow, steady speed. Keep control over the chair at all times.
   - On a descent, do not let your chair accelerate beyond its normal speed.
   - If the chair picks up speed, center the joystick to slow down or stop.

NOTE– *The solid state controller of your chair has a logic system that will help control your speed when driving on a slope or uphill.*

   - If you stop, re-start slowly.

U. RAMPS AT HOME & WORK

⚠WARNING

Make sure ramps meet all Building Codes for your area.

1. For your safety, have a licensed contractor build or remodel ramp to meet all standards.
2. **NOTE–** The proper design will vary, depending on such things as: the length and height of the ramp; the need for an intermediate platform; landing size; doors and the direction of swing; and whether the ramp includes a turn or angle.

At A Minimum:

1. Open sides of ramp must have side rails to prevent your chair from going over the edge.
2. Slope must not be steeper than one inch in height for every one foot of slope length.
3. Ramp surface must be even, and have a non-skid surface.
4. You may need to add a section at the top or bottom to avoid a lip or drop-off.
5. Ramp must be sturdy. Add bracing if needed, so ramp does not "bow" when you ride on it.

V. WHEELCHAIR LIFTS

⚠WARNING

Wheelchair lifts are used in vans, buses, and buildings to help you move from one level to another.

1. Always turn off all power to your chair when you are on a lift. If you fail to do so, you may touch the joystick by accident and cause your chair to drive off the platform. (Be aware that a "roll-stop" at the end of the platform may not prevent this).
2. Make sure there is not a lip or drop-off at the top or bottom of the platform. These may cause a fall or tip-over. When in doubt, have someone help you.
3. Always secure the rider with a positioning belt to help prevent falls during transfers.
4. Avoid moving forward if a wheel is "hung up" on the lip of the ramp. Backup, reposition the caster for a more direct approach and slowly try again.

W. CURBS & SINGLE STEPS

⚠WARNING

1. Your chair is not designed to drive up or down a curb or step more than two and a half (2.5) inches high. Doing so may:
   - Result in a fall or tip-over.
   - Damage the frame, wheels, axles or other chair parts, or loosen fasteners.
2. To prevent a fall or tip-over, use wheelchair access ramps or have someone help you.
3. If you must climb or descend a curb or step alone do so at your own risk and use extreme care.
   - Go as straight up or straight down as you can. Never turn or climb or descend at an angle as a fall or tip-over is likely.
   - Proceed slowly, at a steady speed.
4. Avoid driving along curb edges and drop-offs. A minimum distance from the edge of 18" is recommended.

X. STAIRS

⚠WARNING

Never use this chair to go up or down stairs, even with an attendant. Doing so is likely to cause a fall or tip-over.

Y. ESCALATORS

⚠WARNING

Never take this chair on an escalator, even with an attendant. Doing so is likely to cause a fall or tip-over.

VII. WARNINGS: COMPONENTS & OPTIONS

⚠ WARNING

Note: If you use parts or make changes not authorized by Sunrise it may create a safety hazard and will void the Warranty.

A. ARMRESTS

⚠ WARNING

Armrests cannot be used to lift chair or the seat.

1. Never lift this chair by its armrests.
2. Lift this chair only by non-detachable parts of the main frame.

B. BATTERIES

⚠ WARNING

1. Only deep cycle sealed case construction batteries should be used in this device.
2. To prevent an acid spill, always keep batteries upright. (wet cell batteries only)
3. Never smoke or hold an open flame near batteries. They are a known explosion hazard.
4. Always wear rubber gloves and safety glasses when you handle batteries.
5. Read all of section X Batteries before attempting to change or charge batteries.

C. CUSHIONS

⚠ WARNING

1. Quickie Highback seats are designed for comfort, not specifically for the relief of pressure.
2. If you suffer from pressure sores, or if you are at risk that they will occur, you may need a special seat system such as can be provided by the Seat Frame, or a device to control your posture.
   - Consult your doctor, nurse or therapist to find out if you need such a device for your well-being.

D. FASTENERS

⚠ WARNING

Many of the screws, bolts and nuts on this chair are special high-strength fasteners. Use of improper fasteners may cause your chair to fail.

1. Only use fasteners recommended by Sunrise.
2. If fasteners become loose, tighten them as soon as you can.
3. Over- or under-tightened fasteners may fail or cause damage to chair parts.
   - See Section VIII, “Set-Up, Adjustment & Use”, for proper torque settings.

E. FOOTPLATE & FOOTRESTS

⚠ WARNING

1. At the lowest point, the foot platform and footrests should be at least 2 1/2" off the ground. If set too LOW, it may “hang up” on obstacles you can expect to find in normal use. This may cause the chair to stop suddenly and tip forward.
2. To avoid a trip or fall when you transfer:
   - Make sure your feet do not “hang up” or get caught in the space surrounding or in between the footrests.
   - Avoid putting weight on the footplate or footrests, as the chair may tip forward.
   - Flip the footplate back or swing the footrests out of the way, if possible.
3. Never lift this chair by the footplate or footrests. Footrests fold or detach and will not bear the weight of this chair. Lift this chair only by non-detachable parts of the main frame.

F. MOTOR LOCKS

⚠ WARNING

1. Do not engage or disengage motor locks unless power to the chair is off.
2. Be aware that the chair will not have brakes when motor locks are in the free-wheel position. (See Section F of Operating Guide.)
3. Make sure that the person pushing the chair has full control when motor locks are disengaged.

G. ON/OFF SWITCH

⚠ WARNING

1. Never use the ON/OFF switch to stop the chair except in an emergency. This will result in an abrupt stop and may cause you to fall.
2. To slow your chair to a stop, return the joystick to neutral, before turning off the chair.

H. POSITIONING BELTS

⚠ WARNING

Use a positioning belt only to help support your posture. Improper use of such belts may cause severe injury or death.

1. Make sure you are not at risk to slide down in the wheelchair seat. If this occurs, you may suffer chest compression or suffocate due to pressure from the belt.
2. A pelvic wedge or a similar device can help you from sliding down in the seat. Consult your health care professional to find out if you need such a device.
3. The belt must be snug, but must not be so tight that it interferes with breathing. You should be able to slide your open hand, flat, between the belt and your stomach.
4. Make sure you can easily remove the belt in an emergency.
5. Never use a positioning belt:
   - In place of a motor vehicle seat belt. In an accident or sudden stop you may be thrown from the chair. A positioning belt will not prevent this, and further injury may result from the belt.
   - As a restraint. A restraint requires a doctor’s order.
   - On a rider who is comatose or agitated.

I. SEATING SYSTEMS

⚠ WARNING

1. Use of a seating system not approved by Sunrise may alter the center of balance of this chair. This may cause a fall or tip-over.
2. Never change the seating system of your chair unless you consult your supplier first.

J. UPHOLSTERY FABRIC

⚠WARNING

1. Replace worn or torn fabric of the seat as soon as you can. If you fail to do so, the seat may fail and cause you to fall. Worn fabrics may increase the potential for a fire hazard.
2. Fabric will deteriorate with age and use. Look for fraying, thin spots, or stretching of fabric at rivet holes. Replace fabric as required.
3. Be aware that washing may reduce flame retardation of the fabric.

K. SUSPENSION

⚠WARNING

The suspension system does contain Dry Natural Rubber. The suspension, or any other component on the chair, does not contain any latex based product. The suspension components are enclosed and inaccessible to the user.

L. WIRING

⚠WARNING

Never pull on cables directly. This can result in wires breaking inside the connector or harness. To remove a plug or connector, always grasp the plug or connector itself. (See section XI for wiring diagram.)

M. POWER SEATING (SC only)

⚠WARNING

1. **Operation**
   - While driving this wheelchair in the tilted position use caution.
   - Do Not attempt to operate any power seating option while positioned on an incline.
   - Do Not attempt to operate any power seating option while this wheelchair is in motion.
   - Do not attempt to operate the power seating options around children.
2. **Drive Inhibit**
   This power chair is designed to automatically reduce driving speed when the power seating is tilted more than 16°.
3. **Pinch points**
   Pinch points may occur when operating the powered seating options on this chair. Ensure all hands and body parts are clear of all power seating components that may result in pinch points before operating them.
4. **Tilting Power Base with Push Handles**
   Do not attempt to tilt power wheelchairs by pulling down on the push handles. Power wheelchairs have heavy bases. As such, attempting to tilt a power wheelchair to traverse obstacles can damage components in the seating system and/or modular actuators.
5. **Remain Clear During Power Accessory Operation**
   Please stay clear of any powered actuator while the component is in motion. Sunrise power mechanisms move over large ranges of travel. Users should be aware of their surroundings while components are in motion.
6. **Maximum User Weight**
   Do not exceed the weight capacity for your specific chair/seating system configuration. Doing so could result in premature failure or injury.

N. S.P.O.T. (Single Power Option Tilt) POWER ACCESSORY (SC only)

⚠WARNING

The powered S.P.O.T. accessory for this chair has a maximum user weight capacity of up to 300 lbs. Never exceed this capacity while operating the powered actuator.

⚠WARNING

The powered S.P.O.T. should not be operated for more than three minutes of continuous use. Doing so may shorten the life of the powered S.P.O.T..

VIII. SET-UP, ADJUSTMENT & USE

NOTES:

1. Work Surface For Set-Up:

Use a flat surface, such as a table, to assemble, adjust and check your chair. This makes the steps easier and helps ensure a correct set-up.

2. Fasteners:

- Many of the screws and bolts on this chair are special high-strength fasteners and may have special coatings.
- Many nuts are of the Nylock type. They have a plastic insert to help prevent loosening.

⚠ WARNING

1. **Use of improper fasteners may cause the chair to fail.**
2. **Over- or under-tightened fasteners may fail or cause damage to chair parts.**
3. **If bolts or screws become loose, tighten them as soon as you can. Loose bolts or screws can cause damage to other chair parts causing them to fail.**

3. Washers & Spacers:

- Note the position of washers and spacers before disassembly.
- To avoid damage to the frame, replace all washers and spacers when you reassemble parts.

4. Torque Settings:

- A torque setting is the optimal tightening for a particular fastener. Use a torque wrench that measures 120 inch-pounds to secure screws, nuts and bolts on this chair.

NOTE– *Unless otherwise noted, use a torque setting of 120 inch-pounds for all fasteners.*

TOOLS YOU WILL NEED

1. Basic Tool Kit:

To set-up, adjust and maintain your chair you will need the following tools:

- 5mm Allen Wrench
- 6mm Allen Wrench
- 8mm Allen Wrench
- 3/8" combination wrench
- 10mm combination wrench
- 13mm combination wrench
- 18mm combination wrench
- 17mm deep socket wrench
- 19mm socket wrench
- Phillips screwdriver #2
- Flat-head screwdriver
- Wire cutters
- Needle nose pliers

2. Torque Wrench:

If you plan to adjust and maintain this chair yourself, Sunrise recommends that you use a torque wrench.

NOTE– *The wrench must measure inch-pounds. You can buy a torque wrench and proper sockets from a hardware store.*

CHECK-OUT

Be sure this chair performs to your chosen operational settings. If it does not, turn the chair off immediately and have your supplier reprogram your wheelchair as needed.

NOTE– *Repeat this procedure until the chair performs to your specifications.*

⚠ WARNING

When properly set up, this chair will operate smoothly. Check to see that all components work properly. If you detect a problem, be sure to correct it before use.

A. BATTERY REMOVAL (Figures 1, 2, 3)

To remove the batteries for transporting or servicing:

1. Remove Batteries

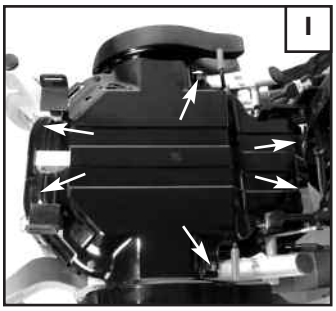
a. Carefully remove seat (see Section I. Seat Removal).
b. Remove the shroud by first removing the six fasteners (Fig. 1) using a flat head screwdriver as shown (Fig. 2). Then lift up on the shroud.
c. Unplug and remove batteries from the chair (Fig. 3).
d. Lift batteries out of the frame.

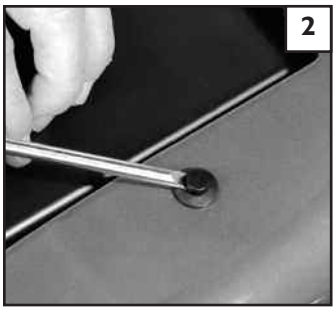
2. Battery Installation

See Section X. Batteries, D for installation.

⚠WARNING

Batteries may weigh up to 39 lbs. Care must be taken to avoid injury when lifting up on battery straps.





B. CENTER MOUNT HANGER ADJUSTMENT

1. Removal (Fig. 4)

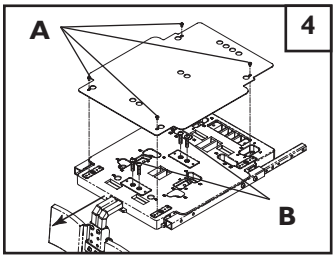
a. Remove the seat pan by removing the four attachment bolts (A).
b. Remove the four bolts (B) and slide the footrest out.

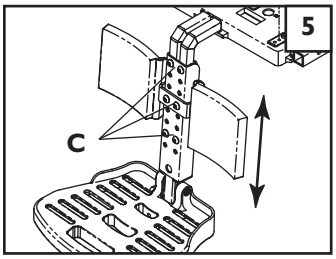
2. Height Adjustment (Fig. 5)

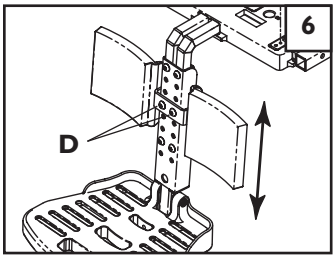
a. Remove the six securing bolts (C).
b. Move footplate to desired height.
c. Re-install bolts (C) through desired holes.

3. Calf Pad Adjustment (Fig. 6)

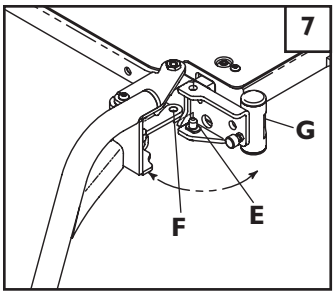
a. Remove the two securing bolts (D).
b. Move calf pads to desired height.
c. Re-install bolts (D) through desired holes.







C. SWING-AWAY FOOTRESTS



1. Installation (Fig. 7)

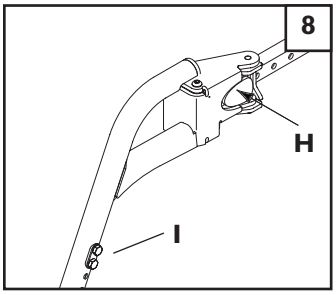
a. Place swing-away pivot pin (E) into the locating hole (F) on top of the hanger mount with the footrest facing outward from frame.
b. Rotate the footrest inward until latch plate locks (G) into place on locking bolt.

2. Removal (Fig. 8)

a. To remove footrest, press quick-release lever (H).
b. Rotate footrest outward and lift.

3. Height Adjustment (Fig. 8)

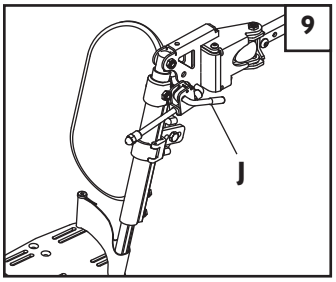
a. Remove both bolts (I) in the hanger frame tube.
b. Reposition footrest height.
c. Re-tighten all bolts (I).



D. ELEVATING LEGREST (Optional)

1. Installation

To install or remove Elevating Legrest (ELR) see instructions for Swing-away Footrest installation.



2. Adjustment (Fig. 9)

a. To raise legrest, lift to desired position. Legrest will automatically lock in place.
b. To lower legrest, while seated in chair, first lift slightly then press release lever (J) down and lower legrest to desired position.

E. JOYSTICK

Controls:

- LED Joystick and color display joystick

Omni Input/Display

The Omni is a universal specialty controls interface that accepts signals from many different types of SIDs and translates them into commands compatible with the PG Drives Technology RNET control system.

Mating Connectors

To connect the communication cables:

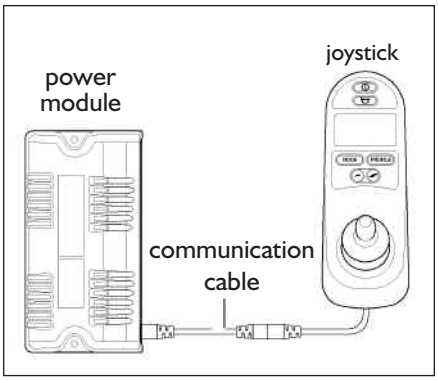
Holding the connector housing, firmly push the connector into its mate until you can no longer see the yellow plastic. The connectors are secured using a friction system.

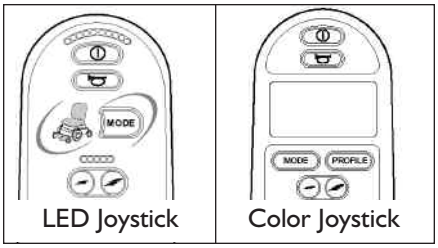
To disconnect the communication cables:

Holding the connector housing firmly, pull the connectors apart.

NOTE– *Do not hold or pull on the cable. Always grip the connector when connecting and disconnecting.*

When the control system is first switched on after a connection, or system component change, the timer will be displayed while the system checks itself. Then the re-start icon will be displayed. Switch the control system off and on again to operate,



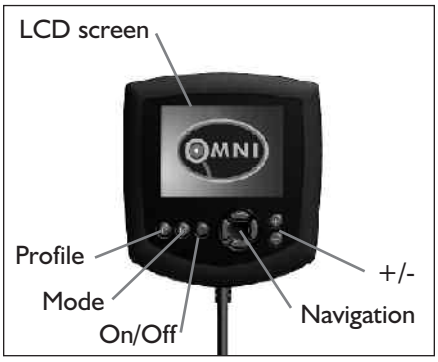


F. JOYSTICK RETRACTABLE MOUNT (Optional) (Fig. 10)

The joystick or Enhanced Display is mounted with a mechanism which allows the control to be locked in a forward or retracted position using magnets.

Adjustment

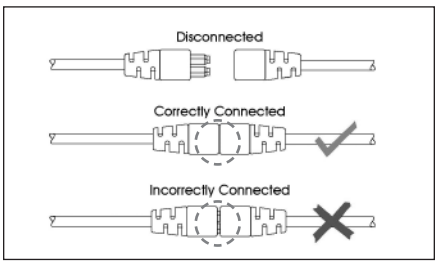
a. To retract the joystick, push outward on the inside of joystick.
b. Push the joystick away from front of armrest until it locks into retracted position.
c. To return to forward position, push the joystick forward until it locks into place.

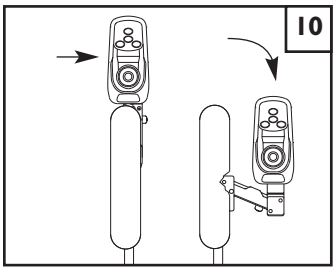


Omni Display

G. ASAP SEATING ADJUSTMENT

Please refer to the ASAP Seating Adjustment Guide for details on how to adjust the seat depth, seat width, armrest height, and backrest angle.





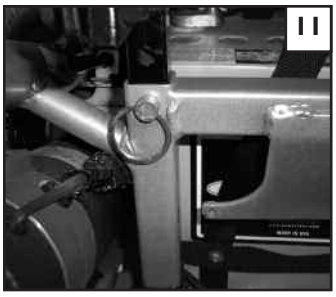
H. SEAT HEIGHT ADJUSTMENT

(Figure 11)

1. Remove seat (See Section I. Seat Removal).
2. Remove pins from all four seat mount posts.
3. Select the desired seat height (rear seat mount should never be more than one position lower than the front).
4. Reinsert the pins.

⚠WARNING

Ensure both front seat posts are positioned to the same height. Rear seat posts should also be set to the same height.



I. SEAT REMOVAL

Remove Seat

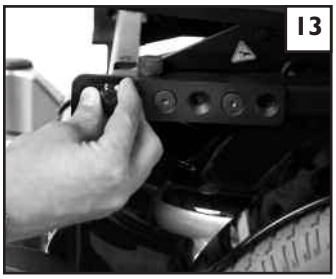
a. Disconnect the joystick power cable in the rear of the chair. (Fig. 12)
b. Remove the two thumbscrews that attach the seat to the front seat posts. (Fig. 13)
c. Tilt the seat back to allow access to the battery compartment (Fig. 14).

⚠WARNING

When replacing the seat into the mounts, ensure you do not pinch your fingers.

⚠WARNING

Always replace the safety lock-out pin to prevent inadvertent release of the seat.



J. SHROUD REMOVAL (Figure 15 & 16)

The plastic protective shroud can be removed for adjustment or servicing.

1. Remove Top Shroud

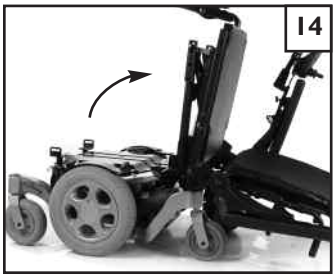
a. Remove the seat (see Section I. Seat Removal).
b. Remove the six fasteners (Fig. 15).
c. Remove shroud by lifting up.

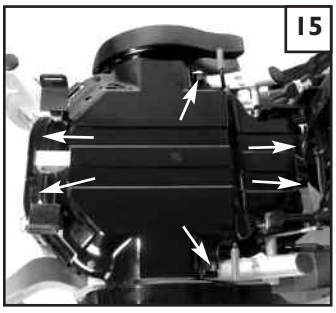
2. Remove Rear Shroud

a. Remove two rear shroud fasteners.
b. Pull downward at the top of the rear shroud (Fig. 16) then lift up.

3. Replace Shroud

Replace shroud by reversing above instructions.





K. CHECK-OUT

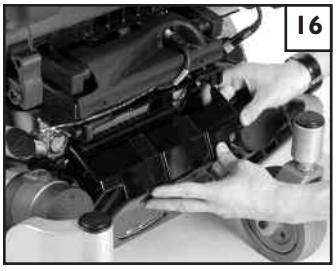
Once the wheelchair is assembled and adjusted, it should roll smoothly and easily. All accessories should also perform smoothly.

After the wheelchair has been set up be sure the chair performs to your specified operational settings (see Operating Guide). If the chair does not perform to specifications, turn the wheelchair OFF immediately and contact your authorized supplier to reprogram operational specifications using the RNET Operating Guide.

Repeat this procedure until the wheelchair performs to specifications before attempting active use of the wheelchair.

If you have any problems, follow these procedures:

1. Review the Set-up, Adjustment & Use section and Operating Guide to make sure chair was properly prepared.
2. If your problem persists, contact your authorized supplier. If you still have a problem after contacting your authorized supplier, contact Sunrise customer service. See the introduction page for details on how to contact your authorized supplier or Sunrise customer service.



IX. OPERATING GUIDE

A. PERFORMANCE CONTROL SETTINGS

NOTE– *Seek advice regarding checking and adjusting settings.*

1. It is vital to match control settings to your level of function and ability.
2. Consult your health care professional and your supplier to select the best control settings for you.
3. Check and adjust the settings every six to twelve months.

⚠ WARNING

Adjust the control settings immediately if you notice any change in your ability to:

- Control the joystick.
- Avoid running into objects.

4. Control Settings can be adjusted by your dealer.

B. ON BOARD PROGRAMMER OR DTT (DIAGNOSTIC TEST TOOL) OR RNET PC PROGRAMMER (Optional)

⚠ WARNING

Program settings beyond the ability of the user can result in serious injury. Consult your health care advisor before you alter settings.

The On-board Programmer or RNET PC Programmer lets you adjust the control settings of the Pulse. Listed below are a few of the many settings that can be adjust via the On-board Programmer or RNET PC Programmer. (See RNET OBP Owners Manual for full programmable parameters.)

- acceleration rate
- deceleration rate
- turn acceleration
- turn deceleration
- forward speed (max & min)
- reverse speed (max & min)
- turn speed (max & min)
- steer correct

Programming the Chair:

a. Access OBP or DTT/PC Programming by using Dongle connected inline of communication cable.
b. Program as needed.
c. Remove Dongle or recycle power.

NOTE– *Review the RNET OBP Owner's Manual for more details on how to program your chair.*

C. THERMAL ROLL-BACK

Your chair has a thermal roll back circuit. This protects the controller from damage due to overheating. In extreme conditions (such as repetitive hill climbing) the circuit will decrease the power to your motors. This allows the chair to operate at a reduced speed. When the controller cools, the chair will return to normal speed.

D. CIRCUIT BREAKERS

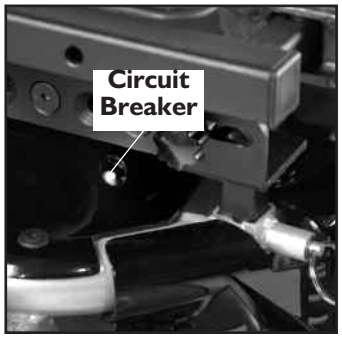
1. Notes:

Your Quickie Pulse has a circuit breaker at the front of the chair.

- In the unlikely event of a short circuit or heavy overload, all power to your chair will be shut off.
- To reset your chair, depress the circuit breaker button located at the rear corner of the chair. A few minutes wait is required before the circuit breaker will reset.

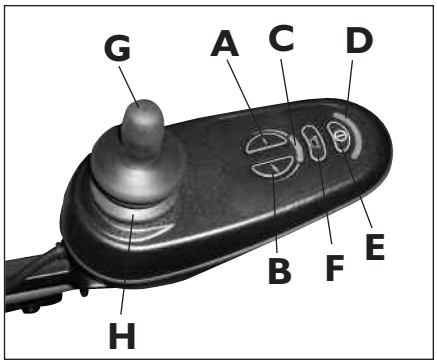
2. Repeated Shutdown:

If the chair continues to shut down after resetting, have it serviced by a supplier.



E. VR2 JOYSTICK ASSEMBLY

The standard VR2 joystick controls the chair's performance. It consists of the following parts:



VR2 Joystick

1. Speed Control or Drive Mode Selection Buttons (A and B)

To decrease the speed level depress button A. Or, when 1- 5 Drive modes are programmed, depress button A to activate lower drive mode(s).

To increase speed level, depress button B. Or, when 1- 5 Drive modes are programmed, depress button B to activate higher drive mode(s).

Speed level active, or Drive Mode selected, is indicated on display (C) by a series of five lights. One light indicates slowest level/mode currently active, while five lights indicates highest level/mode currently active.

2. Battery Charge Indicator (D)

- Green lights indicate that batteries are fully charged.
- Yellow lights indicate that batteries need recharging.
- When the lights stay in the red band, the batteries must be recharged.

3. On/Off Button (E)

Turning the chair on or off is accomplished by depressing button E.

4. Horn (F)

5. Joystick (G)

The joystick controls the direction and speed of your chair. Turn the chair on and move the joystick in the direction you want to go.

- Moving the joystick from the neutral (center) position disengages the motor locks, allowing the chair to move.
- The chair will move faster the more you move the joystick away from neutral.

NOTE– *If your speed becomes hard to manage, release the Joystick and the chair will come to a complete stop.*

- When you release the joystick it will return to neutral; the chair will slow to a stop and the motor locks will reengage.
- We recommend that you switch the chair off if you stop for any length of time. This will conserve battery power.

NOTE– *Once the chair stops, switching the chair off will not affect the motor locks.*

6. Joystick Boot (H)

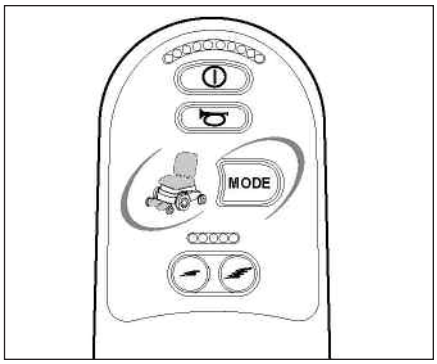
Make sure the boot is not torn or cracked (this could allow debris, water or moisture to enter). If the boot is torn or cracked, replace it as soon as you can.

7. Tilt Control (SC only) (I)

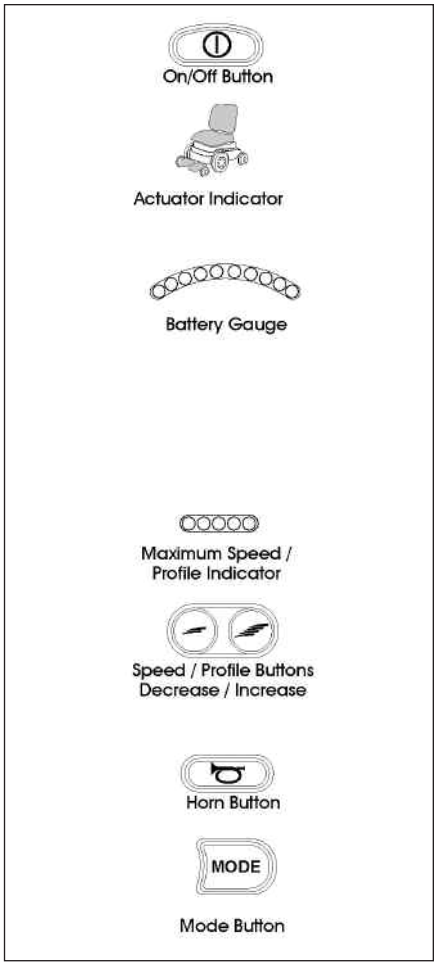
This button once depressed allows you to control the up and down movement of the tilt. Press button "I". Then pull the joystick back to tilt the seat upward or push the joystick forward to tilt the seat downward. Pressing button "I" again will allow drive operations to resume.

VR2 Joystick with Actuator Control

F. LED JOYSTICK



LED Joystick



On/Off Button

The on/off button applies power to the control system electronics, which in turn supply power to the wheelchair's motors. Do not use the on/off button to stop the wheelchair unless there is an emergency. (If you do, you may shorten the life off the wheelchair drive components.)

Horn Button

The horn will sound while this button is depressed.

Battery Gauge

The battery gauge show you that the wheelchair is switched on. It also indicates the operating status of the wheelchair.

- If the battery gauge shows red, yellow and green, the batteries are charged (bars 1 - 10).
- If the battery gauges show just red and yellow, then you should charge the batteries as soon as you can (bars 1 - 7).
- If the battery gauge shows just red, either steady or flashing slowly, then you should charge the batteries immediately (bars 1 - 3).

Maximum Speed Indicator

This is a gauge that shows the maximum speed setting of the wheelchair. There are five speed settings– step 1 is the lowest speed and step 5 is the highest speed.

Speed Decrease Button

This button decreases the maximum speed setting or, if the control system is programmed for drive profile operation, selects a lower drive profile.

Speed Increase Button

This button increases the maximum speed setting or, if the control system is programmed for drive profile operation, selects a higher drive profile.

Mode Button

The Mode button allows the user to navigate through the available operating modes for the control system. The available modes are dependent on programming and the range of auxiliary output devices connected to the control system.

Actuator Indicator

This LED set displays which actuator channel is currently being controlled when the control system is in Actuator Mode. Actuator selection and operation is achieved using the joystick.

- Motions to the LEFT or RIGHT select different actuator channels.
- Motions FORWARD and BACKWARD move the actuator(s) selected.

Speed Indication

The number of LED's illuminated shows the maximum speed setting. For example, if the setting is speed level 4, then the four left hand LED's will be illuminated.

G. COLOR LCD SCREEN

This section covers those joystick modules that are fitted with a color LCD screen. The color LCD screen is split into three areas of information. The Top Bar, the Base Bar and the Main Screen Area.

Top Bar (Fig. 1 & 2)

Battery Indicator (Fig. 2): Displays the charge available in the battery and can be used to alert the user to the status of the battery.

Steady: Indicates that all is well.

Flashing Slowly: The control system is functioning correctly, but you should charge the battery as soon as possible.

Stepping Up: The wheelchair batteries are being charged. You will not be able to drive the wheelchair until the charger is disconnected and you have switched the control system off and on again.

Base Bar (Fig. 3)

Current Profile: The currently selected profile is shown in numeric form.

Main Screen Area

Drive Screen

Profile Name (Fig. 4): This is a text string that displays the name of the currently selected profile.

Clock (Fig. 5): This displays the current time in a numeric format.

Speed Display (Fig. 6): This gives a proportional display of the wheelchair's speed.

Maximum Speed Indicator (Fig. 7): This displays the current maxiumum speed setting.

Digital Speed Display (Fig. 8): This displays the actual speed of the wheelchair derived from the motors.

Inhibit (Fig. 9): If the speed of the wheelchair is being limited; for example, by a tilted seat, then this orange symbol will be displayed.

Mode Screens

Actuator Mode (Fig. 10): Displays the sections of the chair currently selected for movement, the name given to the selection and a direction arrow showing what sort of movement is available.

Speed Adjust (Fig. 11): When Speed Adjust Mode is entered, the following screen shown in Figure 11 will be displayed.

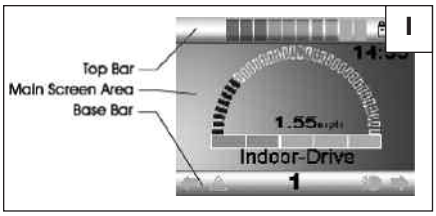
Message Window (Fig. 12): The RNET displays warning icons and informational messages, in a dedicated message window.

Restart (Fig. 13): When the control system requires a reboot; for example, after a module re-configuration, this symbol will be flashed.

Timer (Fig. 14): This symbol is displayed when the control system is changing between different states. An example would be entering into Programming Mode. The symbol is animated to show the sands falling.

Diagnostic Screen (Fig. 15)

When the control system safety circuits have operated and the control system has been prevented from moving the wheelchair, a diagnostics screen will be displayed. This indicates a system trip, i.e. the RNET has detected a problem somewhere in the wheelchair's electrical system.



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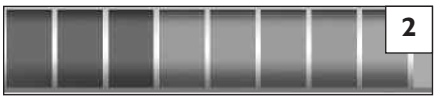
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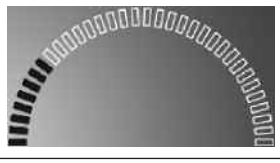
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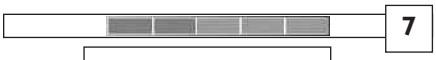
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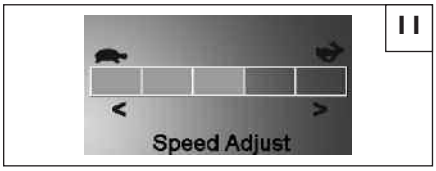

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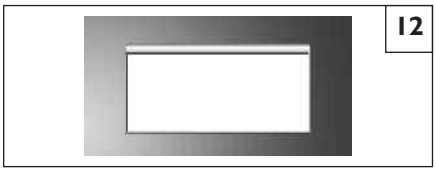
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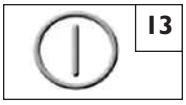
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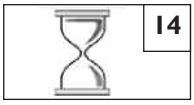
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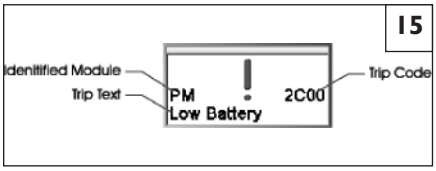

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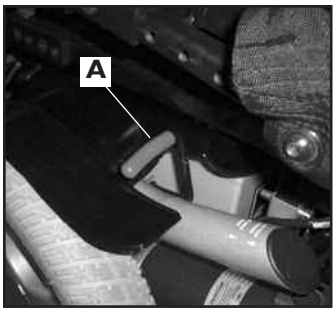
H. MOTOR LOCKS



Disconnect the motor locks when you need to manually push the chair.
(For example, in an emergency, or if batteries fail).

⚠WARNING

1. **Do not disengage motor locks unless power to the chair is off.**
2. **With either one or both brakes released, the chair will not operate and the battery charge indicator will flash 9 bars rapidly (if power to the chair is on.)**
3. **Be aware that the chair will not have brakes in the free-wheel position.**
4. **Make sure that the person pushing the chair has full control when motor locks are disengaged.**

1. Release Motor Locks

a. The motor release levers (A) are attached to the upper rear section of the motors located towards the back of the chair.
b. Pull the release levers rearward toward the rear of the chair.

2. Engage Motor Locks

a. The motor release levers (A) are attached to the upper rear section of the motors located at the back of the chair.
b. Push the motor release levers inward, toward the front of the chair.

NOTE– *If the lever is difficult to disengage, rock the wheelchair slightly from front to rear and/or push against the chair while moving the lever.*

X. BATTERIES

A. INTRODUCTION

1. Notes:

- Batteries supply the power for your chair. They contain a finite amount of energy and have limits on how long they can store and supply energy.
- You can charge batteries only a certain number of times before they will fail and no longer hold a charge.
- For answers to questions about batteries, consult your supplier.

2. Use Proper Batteries:

Your chair operates on two 12 volt batteries.

- They should be Group 22 batteries.
- When you buy a replacement, insist on a deep cycle sealed case. Do not use a car starter battery.

3. Breaking In:

- A battery requires "breaking-in" for the first 6 to 12 charges. It will not accept a full charge for this period.
- It is best to limit the length of your trips until you break the batteries in and you know the range of your chair.

4. Discharged Batteries:

- **Never** allow a battery to completely discharge. If you operate your wheelchair until it has almost stopped, you will greatly reduce the life of your batteries.
- **Never** let a battery sit in a discharged condition. Give unused or stored batteries a full charge once per month.
- **Always** fully charge the batteries. Avoid "topping off" with frequent charges.

⚠ WARNING

Never connect a life support or auxiliary device to a wheelchair battery. The electrical system may fail and result in severe injury to or death of rider.

B. BATTERY CHARGER

A battery charger produces a direct current (DC). When applied to a discharged battery, this reverses the chemical reaction that led to its discharge.

1. Charge Rate. How fast a battery will charge depends on:

- Its electrical capacity, state of charge, electrolyte temperature, and internal condition.
- The DC output of the charger. (The charge rate will vary if the alternating current (AC) supply is higher or lower than 110 volts).

2. CAUTION– To Avoid Damage to the Charger

- **Never** expose charger to rain or snow.
- **Never** unplug charger by pulling on the electrical cord. This will damage the cord.
- **Never** open a charger or attempt to repair it yourself. Return charger to Sunrise or have repairs made only by a qualified person.
- Keep cord out of the way, where it will not be stepped on, tripped over, or damaged.

3. CAUTION– To Avoid Damage to the Battery

- Make sure you use the correct setting for sealed (gel) batteries (located on off-board chargers).
- **Never** charge a frozen battery. A fully charged battery will rarely freeze, but the fluid in a discharged battery can freeze at 16 degrees Fahrenheit (minus 9 degrees Centigrade). If you suspect a battery is frozen, thaw it before charging.

⚠ WARNING

Lead acid batteries generate explosive gas while charging. Completely read and follow all warnings about the batteries in this user instruction manual and any labels applied to the product. Failure to do so could result in fire, explosion, injury and/or death.

C. ACID BURNS (UNSEALED WET CELL BATTERIES)

Acid in batteries is corrosive. If you choose to use wet cell batteries, they can cause serious burns to the eyes and skin and can damage floors, furniture, clothing and your wheelchair.

⚠ WARNING

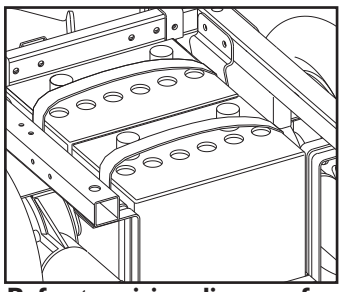
1. **Use extreme care not to spill acid when you handle wet cell batteries. Keep batteries upright.**
2. **Avoid contact of acid with bare skin or clothing.**
3. **Always wear rubber gloves and safety glasses when you handle batteries.**
4. **If acid contacts your skin or clothing, wash immediately with soap and water.**
5. **If acid contacts your eyes, immediately flood eyes with cold running water for at least 15 minutes. Seek medical attention immediately.**

Sunrise Medical does not recommend the use of wet cell batteries on this chair.

D. CONNECTING BATTERIES IN BATTERY WELL

⚠ WARNING

1. **Each battery weighs up to 45 lbs. Take care to avoid injury when lifting.**
2. **Keep batteries upright. Take care not to spill acid (wet cell batteries).**
3. **Always wear rubber gloves and safety glasses when you handle batteries.**



Refer to wiring diagram for battery connections

4. **Before working around batteries, remove all metal personal effects, such as necklaces, rings, watches, pins, and other metal jewelry that might contact battery terminal and cause a short.**
1. Attach battery harness to battery post. Connect red to positive terminal and black to negative terminal.
2. Tighten all terminal fasteners using two wrenches.
3. Cover battery posts with insulating caps on harness.
4. Lift batteries into battery well.

⚠WARNING

Batteries weigh up to 45 pounds. Lifting batteries may cause back strain. If you fail to heed these warnings severe injury may occur to you.

5. Plug battery harnesses into chair harness.
6. Place shroud into position.

⚠WARNING

Never make direct contact across both battery terminals, as an explosion may occur. A spark may result in an explosion and/or fire resulting in severe injury or death.

E. CHARGING BATTERIES

⚠WARNING

To avoid the risk of severe injury or death from electrical shock, fire or explosion while charging:

1. **Never** connect charger to a 240 volt source. The main input voltage is 110 volts.
2. **Never** touch the charger after it is connected to an electrical outlet. This may cause electrical shock.
   - **Never** connect or disconnect charger from battery while there is power to the charger.

Off-board charger port (located under joystick)

3. **Never** use an extension cord. Use of an improper cord could damage the charger or cause a fire or electrical shock.
4. A battery emits explosive hydrogen gas during charging. To reduce the risk of fire or explosion:
   - Make sure area is well vented. Never charge battery in a closed-in area.
   - Never smoke or allow a spark, flame or high heat near battery during charging.
   - Never allow metal tools or chair parts to make direct contact across both battery terminals.
5. Never look directly into cells when charging battery (wet cell batteries).

ALWAYS:

1. Use the charger that comes with your wheelchair. Read and follow all instructions and warnings.
2. Make sure room is well ventilated.
3. Turn off all power to your chair.
4. Connect and disconnect battery cables with caution.
5. Make sure to allow enough time to fully charge batteries.

NOTE– *Batteries should never be left for long periods in the discharged state. Unused or stored batteries should be given a charge once per month.*

6. Charge batteries by plugging in the battery charger cord into the chair and an outlet.
7. Or, use an off-board charger by plugging it into the joystick.

F. DISPOSING OF BATTERIES

⚠WARNING

1. All batteries once they have reached the end of their useful life are deemed to be hazardous waste.
2. For further information on handling and recycling contact your local recycling authority.
3. Always dispose of product through a recognized agent.

XI. MAINTENANCE

A. NOTES

1. Proper maintenance will improve performance and extend the useful life of your chair.
2. Clean your chair regularly. This will help you find loose or worn parts and will make your chair easier to use.
3. To protect your investment, have all major service and repair work done by your supplier.

⚠ WARNING

1. **Your chair needs regular maintenance for peak performance and to avoid injury from chair failure, damage or premature wear.**
2. **Inspect and maintain this chair strictly per the "Maintenance Chart".**
3. **If you detect a problem, make sure to service or repair the chair before use.**
4. **At least once a year, have a complete safety check and service of your chair performed by a supplier.**

B. CLEANING

1. Plastic Shroud Cover:

- Clean the plastic finish with mild soapy water monthly.

2. Motors:

- Clean around motor area weekly with a slightly damp (not wet) cloth.
- Wipe off or blow away any fluff, dust, or dirt on or around the motors.
- Note: You do not need to grease or oil the chair.

3. Upholstery:

- Hand-wash only as needed. Machine washing may damage fabric (rehab seat only).
- Drip-dry only. Heat from a dryer may damage fabric.

NOTE– *Washing the fabric may decrease fire retardant properties.*

C. STORAGE TIPS

1. Store your chair in a clean, dry area. If you fail to do so, parts may rust or corrode.
2. Before using your chair, make sure it is in proper working order. Inspect and service all items on the "Maintenance Chart".
3. If you store this chair for more than three months, have it inspected by a supplier before use.

D. BATTERY MAINTENANCE

⚠ WARNING

1. **To prevent an acid spill, always keep batteries upright. (wet cell batteries)**
2. **Never smoke or hold an open flame near batteries.**
3. **Always wear rubber gloves and safety glasses when you handle batteries.**

1. Maintenance Schedule:

This varies for different types of batteries. Always follow the instructions supplied with your batteries.

NOTE– *Always wear rubber gloves and safety glasses when you handle or service batteries.*

2. Adding Water: (Wet Cells Only)

- Wet-type lead acid batteries need periodic replacement of water lost.

NOTE– *Use distilled water only.*

- Check the battery fluid level about once a week. When you remove the stoppers (on top of the battery) there should be one-eighth to one-quarter of an inch of fluid above the internal plates. Do not overfill.

3. Corrosion:

Check battery terminals often for corrosion.

a. If corrosion is present, use a wire brush to clean the terminals.

NOTE– *Always wear safety glasses and rubber gloves.*

b. Use baking soda to neutralize acid.
c. Use petroleum jelly to re-grease the terminals after connecting cables to battery. (Completely cover the terminal nut and bolt, cable clip and any exposed cable with jelly).

4. For Answers To Questions: Contact your supplier.

E. TO REPAIR OR REPLACE A TIRE

⚠ WARNING

Residual air pressure in tires can cause severe injury. Make sure you release all air in tire before attempting to service or repair tires.

Drive Wheels:

a. Elevate and securely support chair so that wheel is off the ground. Release all air from tire (solid aluminum rim only).
b. Remove center cap.
c. Remove four Allen bolts.
d. Remove wheel from chair.
e. Remove all bolts holding two halves of rim together (not applicable on solid aluminum rim), and remove tire and solid insert.
f. Repair or replace.

NOTE– *Do not use pneumatic inner tube in tires with two-piece rims.*

g. Reassemble the wheel.
Use a torque setting of 420 in.-lbs. to re-tighten bolts.
h. Install wheel on chair by replacing center lock bolt. Use a torque setting of 180 in.-lbs. to retighten bolts.
i. Inflate tire to proper pressure level (listed on tire sidewall).

F. MOTOR BRUSHES

Check the motor brushes every four (4) months for wear. The brushes should be clean and shiny. Replace worn or blackened brushes.

G. ORDERING PARTS

When you order parts, provide the following:

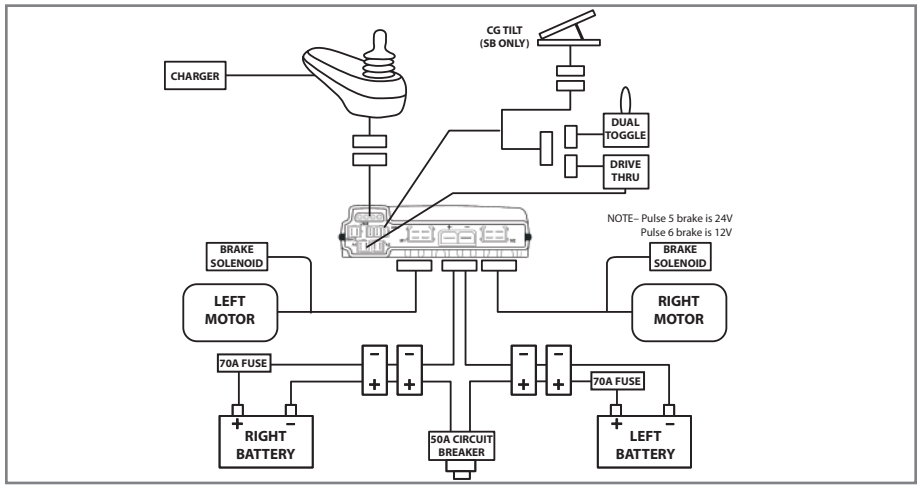
1. Model of chair
2. Serial number of chair
3. Left hand or right hand control
4. Part number, description and quantity of parts you need.
5. State reason for replacement.

H. MAINTENANCE CHART

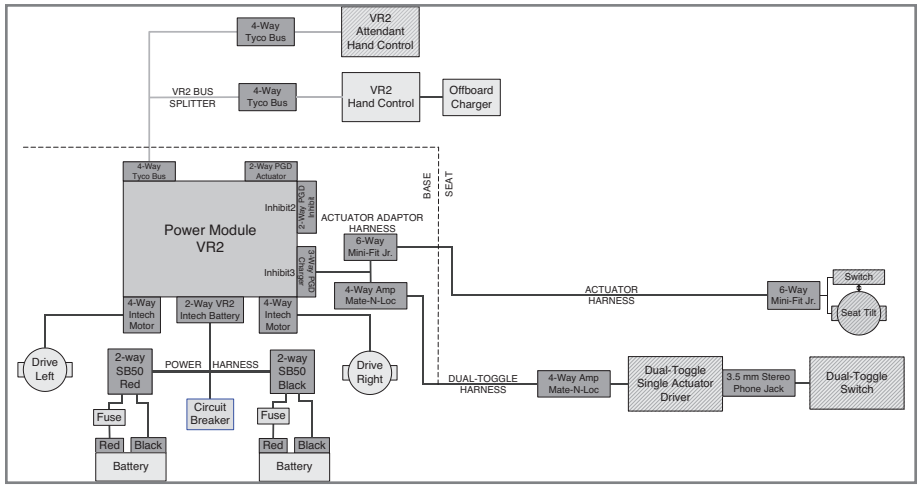
You should check the items on this chart at the indicated intervals. If any of the items are loose, worn, bent or distorted, immediately have them checked and/or repaired by your authorized Sunrise supplier. Frequent maintenance and servicing will improve performance and extend wheelchair life, and help prevent injuries.

CHECK...	Daily	Weekly	Monthly	Quarterly	Annually
Charge batteries	✓				
Check tires for proper inflation level		✓			
Check batteries for proper electrolyte level (wet cell only)		✓			
Check plugs and connectors for proper connections			✓		
Check all moving parts for wear				✓	
Inspect all nuts, bolts and fasteners for looseness or wear				✓	
Inspect upholstery for wear				✓	
Remove and inspect motor brushes				✓	
Service by authorized supplier					✓

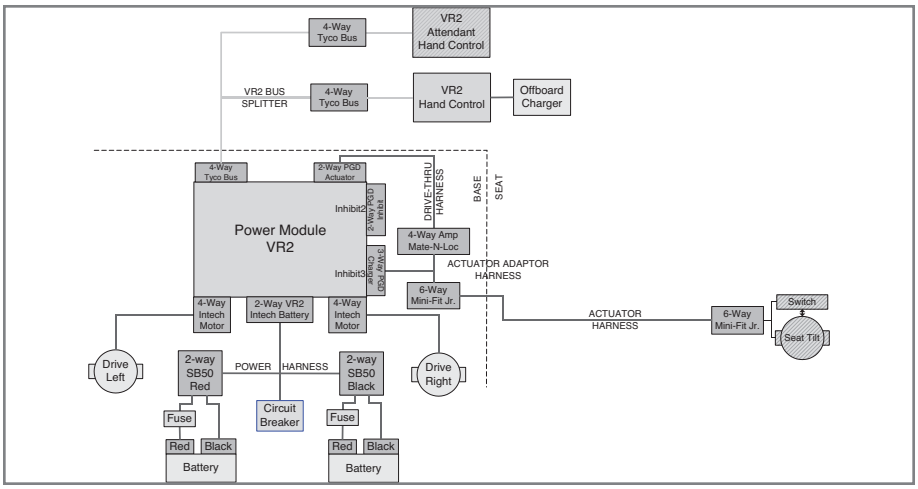
I. WIRING DIAGRAMS



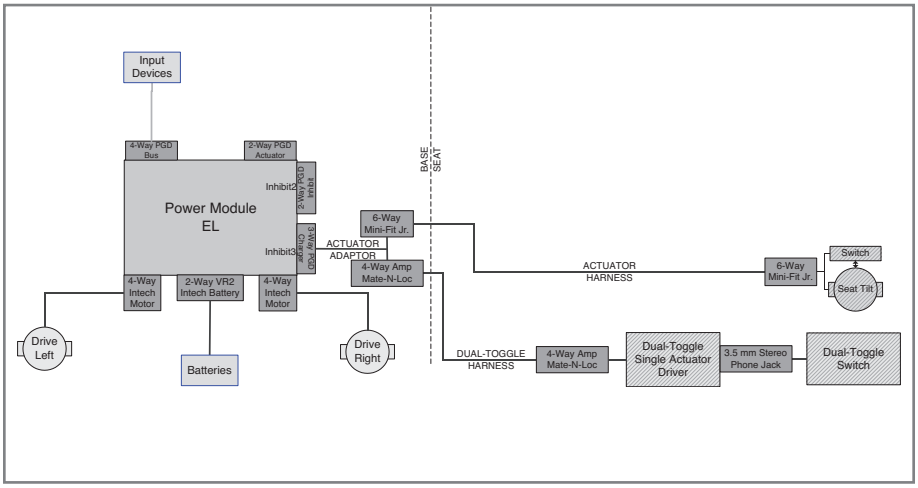
VR2 Joystick Wiring Diagram



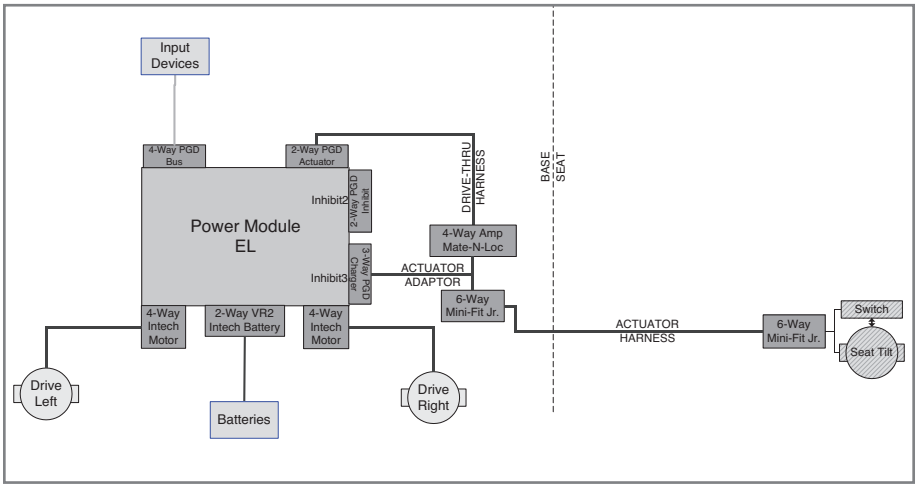
VR2 Dual-Toggle Single Actuator



VR2 Drive-Thru Single Actuator (with battery detail)



RNET Dual-Toggle Tilt



RNET Drive-Thru Tilt

XII. SUNRISE LIMITED WARRANTY

A. FOR FIVE (5) YEARS

Sunrise warrants the frame of this wheelchair against defects in materials and workmanship for five years from date of first consumer purchase.

B. FOR ONE (1) YEAR

We warrant all Sunrise-made parts and components of this wheelchair against defects in materials and workmanship for one year from the date of first consumer purchase.

C. FOR ONE (1) YEAR

We warrant all motors, gearboxes, batteries, and electronic components of this wheelchair against defects for one year from the date of first consumer purchase.

D. LIMITATIONS

1. We do not warrant:
   a. Tires and tubes, upholstery, pads and push-handle grips.
   b. Damage from neglect, accident, misuse, or from improper installation or repair.
   c. Products modified without Sunrise Medicals express written consent.
   d. Damage from exceeding the weight limit.
2. This warranty is VOID if the original chair serial number tag is removed or altered.
3. This warranty applies in the USA only. Check with your supplier to find out if international warranties apply.
4. This warranty is not transferable and only applies to the first consumer purchase of this wheelchair through an authorized Sunrise Medical dealer.

E. WHAT WE WILL DO

Our sole liability is to repair or replace covered parts. This is the exclusive remedy for consequential damages.

F. WHAT YOU MUST DO

1. Obtain from us, while this warranty is in effect, prior approval for return or repair of covered parts.
2. Return the wheelchair or part(s), freight pre-paid, to Sunrise Mobility Products Division at: 2842 Business Park Avenue, Fresno, CA 93727-1328.
3. Pay the cost of labor to repair, remove or install parts.

G. NOTICE TO CONSUMER

1. If allowed by law, this warranty is in place of any other warranty (written or oral, express or implied, including a warranty of merchantability, or fitness for a particular purpose).
2. This warranty gives you certain legal rights. You may also have other rights that vary from state to state.

Record your serial number here for future reference:

_____

Sunrise Medical Inc.
7477 East Dry Creek Parkway
Longmont, Colorado 80503
USA
(800) 333-4000
In Canada (800) 263-3390
www.sunrisemedical.com

SUNRISE MEDICAL

www.sunrisemedical.com

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